# Complete Summary

## GUIDELINE TITLE

ACR Appropriateness Criteria™ for patient with suspected small bowel obstruction: imaging strategies.

## BIBLIOGRAPHIC SOURCE(S)

DiSantis DJ, Ralls PW, Balfe DM, Bree RL, Glick SN, Levine MS, Megibow AJ, Saini S, Shuman WP, Greene FL, Laine LA, Lillemoe K. The patient with suspected small bowel obstruction: imaging strategies. American College of Radiology. ACR Appropriateness Criteria. Radiology 2000 Jun;215(Suppl):121-4. [39 references]

## COMPLETE SUMMARY CONTENT



## SCOPE

### DISEASE/CONDITION(S)

Small bowel obstruction

### GUIDELINE CATEGORY

Diagnosis

### CLINICAL SPECIALTY

Gastroenterology
Radiology

### INTENDED USERS

Health Plans
Hospitals
Managed Care Organizations

Physicians
Utilization Management

### GUIDELINE OBJECTIVE(S)

To evaluate the appropriateness of initial radiologic examinations for patients suspected of a small bowel obstruction

### TARGET POPULATION

Patients with suspected small bowel obstruction

### INTERVENTIONS AND PRACTICES CONSIDERED

1. Computed tomography
    - Abdomen and pelvis
2. Plain x-ray
    - Supine and upright abdomen
    - Small bowel follow-through
    - Small bowel enteroclysis
3. Ultrasound
    - Abdomen sonogram
4. Magnetic Resonance Imaging
    - Abdomen evaluation

### MAJOR OUTCOMES CONSIDERED

Utility of radiologic examinations in differential diagnosis considered.

## METHODOLOGY

### METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

### DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The guideline developer performed literature searches of recent peer-reviewed medical journals, primarily using the National Library of Medicine´s MEDLINE database. The developer identified and collected the major applicable articles.

### NUMBER OF SOURCE DOCUMENTS

The total number of source documents identified as the result of the literature search is not known.

### METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus (Delphi Method)
Weighting According to a Rating Scheme (Scheme Not Given)

## RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

## METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

## DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

One or two topic leaders within a panel assume the responsibility of developing an evidence table for each clinical condition, based on analysis of the current literature. These tables serve as a basis for developing a narrative specific to each clinical condition.

## METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus (Delphi)

## DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Since data available from existing scientific studies are usually insufficient for meta-analysis, broad-based consensus techniques are needed to reach agreement in the formulation of the Appropriateness Criteria. Serial surveys are conducted by distributing questionnaires to consolidate expert opinions within each panel. These questionnaires are distributed to the participants along with the evidence table and narrative as developed by the topic leader(s). Questionnaires are completed by the participants in their own professional setting without influence of the other members. Voting is conducted using a scoring system from 1-9, indicating the least to the most appropriate imaging examination or therapeutic procedure. The survey results are collected, tabulated in anonymous fashion, and redistributed after each round. A maximum of three rounds is conducted and opinions are unified to the highest degree possible. Eighty (80) percent agreement is considered a consensus. If consensus cannot be reached by this method, the panel is convened and group consensus techniques are utilized. The strengths and weaknesses of each test or procedure are discussed and consensus reached whenever possible.

## RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

## COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

## METHOD OF GUIDELINE VALIDATION

Internal Peer Review

## DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Criteria developed by the Expert Panels are reviewed by the American College of Radiology (ACR) Committee on Appropriateness Criteria and the Chair of the ACR Board of Chancellors

# RECOMMENDATIONS

## MAJOR RECOMMENDATIONS

ACR Appropriateness Criteria™

Clinical Condition: Suspected Small Bowel Obstruction

Variant 1: No prior history of malignancy.

| Radiologic Exam Procedure | Appropriateness Rating | Comments |
|---|---|---|
| Computed Tomography | | |
| Abdomen and pelvis | 8 | |
| Plain X-ray | | |
| Supine and upright abdomen | 8 | |
| Small bowel follow-through with oral ingestion | 6 | |
| Small bowel enteroclysis | 6 | |
| Ultrasound | | |
| Abdomen sonogram | 3 | For experienced sonologists, may be an acceptable alternative means of diagnosis. |
| Magnetic Resonance Imaging | | |
| Abdomen evaluation | 2 | |
| Appropriateness Criteria Scale<br><br>1 2 3 4 5 6 7 8 9 | | |

| 1=Least appropriate 9=Most appropriate |
|---|

Variant 2: Prior history of malignancy.

| Radiologic Exam Procedure | Appropriateness Rating | Comments |
|---|---|---|
| Computed Tomography | | |
| Abdomen and pelvis | 8 | |
| Plain X-ray | | |
| Supine and upright abdomen | 8 | |
| Small bowel follow-through with oral ingestion | 6 | |
| Small bowel enteroclysis | 6 | |
| Ultrasound | | |
| Abdomen sonogram | 4 | |
| Magnetic Resonance Imaging | | |
| Abdomen evaluation | 2 | |
| Appropriateness Criteria Scale<br><br>1 2 3 4 5 6 7 8 9<br><br>1=Least appropriate 9=Most appropriate | | |

Conclusions

Because of universal availability and low cost, plain film abdominal radiography is an appropriate initial step for imaging evaluation of patients with suspected small bowel obstruction. If plain films are equivocal on the presence of obstruction or if assessment of the degree or etiology of obstruction is warranted, a contrast study or computed tomography should be considered.

For distinguishing small bowel obstruction from an adynamic ileus, as well as for excluding colonic obstruction, the single contrast barium enema provides a reliable, inexpensive test. Oral contrast administration is more problematic. Although enteroclysis seems superior for detection and characterization of small bowel obstruction, in several studies the barium or water-soluble contrast small bowel follow-through has provided information useful for management. If small bowel follow-through is performed for suspected small bowel obstruction, close monitoring with careful frequent fluoroscopy is a must.

The decision for enteroclysis or computed tomography will be influenced by clinical setting. If low-grade partial obstruction is a chief diagnostic concern, enteroclysis is appropriate. If localization and characterization of suspected high-grade obstruction are the goals, either computed tomography or enteroclysis offers a high chance for success, including in patients with known abdominal malignancy.

### CLINICAL ALGORITHM(S)

Algorithms were not developed from criteria guidelines.

## EVIDENCE SUPPORTING THE RECOMMENDATIONS

### TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The recommendations are based on analysis of the current literature and expert panel consensus.

## BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

### POTENTIAL BENEFITS

Selection of appropriate radiologic imaging procedures for evaluation of patients suspected of a small bowel obstruction.

### POTENTIAL HARMS

- Evaluation of suspected small bowel obstruction with oral water-soluble contrast agents has the potential for intravascular volume depletion and electrolyte imbalance, plus the poorer imaging characteristics as compared with barium.
- Rare complications with barium studies, such as conversion from partial to complete obstruction and barium peritonitis have been reported.

## QUALIFYING STATEMENTS

### QUALIFYING STATEMENTS

An American College of Radiology (ACR) Committee on Appropriateness Criteria and its expert panels have developed criteria for determining appropriate imaging examinations for diagnosis and treatment of specified medical condition(s). These criteria are intended to guide radiologists, radiation oncologists, and referring physicians in making decisions regarding radiologic imaging and treatment. Generally, the complexity and severity of a patient's clinical condition should dictate the selection of appropriate imaging procedures or treatments. Only those exams generally used for evaluation of the patient's condition are ranked. Other imaging studies necessary to evaluate other co-existent diseases or other medical consequences of this condition are not considered in this document. The availability of equipment or personnel may influence the selection of appropriate imaging procedures or treatments. Imaging techniques classified as

investigational by the U.S. Food and Drug Administration (FDA) have not been considered in developing these criteria; however, study of new equipment and applications should be encouraged. The ultimate decision regarding the appropriateness of any specific radiologic examination or treatment must be made by the referring physician and radiologist in light of all the circumstances presented in an individual examination.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Getting Better

### IOM DOMAIN

Effectiveness

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

DiSantis DJ, Ralls PW, Balfe DM, Bree RL, Glick SN, Levine MS, Megibow AJ, Saini S, Shuman WP, Greene FL, Laine LA, Lillemoe K. The patient with suspected small bowel obstruction: imaging strategies. American College of Radiology. ACR Appropriateness Criteria. Radiology 2000 Jun;215(Suppl):121-4. [39 references]

### ADAPTATION

Not applicable: The guideline was not adapted from another source.

### DATE RELEASED

1996 (revised 1999)

### GUIDELINE DEVELOPER(S)

American College of Radiology - Medical Specialty Society

### SOURCE(S) OF FUNDING

The American College of Radiology (ACR) provided the funding and the resources for these ACR Appropriateness Criteria.™

## GUIDELINE COMMITTEE

ACR Appropriateness Criteria™ Committee, Expert Panel on Gastrointestinal Imaging.

## COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Names of Panel Members: David J. DiSantis, MD; Philip W. Ralls, MD; Dennis M. Balfe, MD; Robert L. Bree, MD; Seth N. Glick, MD; Marc S. Levine, MD; Alec J. Megibow, MD, MPH; Sanjay Saini, MD; William P. Shuman, MD; Frederick Leslie Greene, MD; Loren A. Laine, MD; Keith Lillemoe, MD

## FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

## GUIDELINE STATUS

This is the current release of the guideline. It is a revision of a previously issued version (Appropriateness criteria for the patient with suspected small bowel obstruction: imaging strategies. Reston [VA]: American College of Radiology (ACR); 1996. 4 p. [ACR Appropriateness Criteria™]).

The ACR Appropriateness Criteria™ are reviewed after five years, if not sooner, depending upon introduction of new and highly significant scientific evidence. The next review date for this topic is 2004.

## GUIDELINE AVAILABILITY

Electronic copies: Available from the American College of Radiology (ACR) Web site.

Print copies: Available from ACR, 1891 Preston White Drive, Reston, VA 20191. Telephone: (703) 648-8900.

## AVAILABILITY OF COMPANION DOCUMENTS

None available

## PATIENT RESOURCES

None available

## NGC STATUS

This summary was completed by ECRI on March 19, 2001. The information was verified by the guideline developer on March 29, 2001.

## COPYRIGHT STATEMENT

This NGC summary is based on the original guideline, which is subject to the guideline developer's copyright restrictions.

Appropriate instructions regarding downloading, use and reproduction of the American College of Radiology (ACR) Appropriateness Criteria™ guidelines may be found at the American College of Radiology's Web site www.acr.org.



Date Modified: 10/25/2004